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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,375

05/16/2007

Yan Fu

9896-000088/US/NP

8405

27572 7590 09/28/2009
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EXAMINER

ELLIOTT IV, BENJAMIN H

ART UNIT

PAPER NUMBER

2416

MAIL DATE

DELIVERY MODE

09/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,375	Applicant(s) FU ET AL.	
	Examiner BENJAMIN ELLIOTT	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 6-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3 and 6-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/22/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to applicants' response/arguments/amendments received 5/22/2009.
2. Claims 1, 3, and 6-20 have been examined and are pending. Claims 1, 3, and 6-9 have been amended. Claims 2 and 4-5 have been canceled. Claims 11-20 have been newly added. Claims 1, 3, and 6-20 stand rejected.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 5/22/2009 has been found to be in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

Response to Arguments

4. Applicant's arguments with respect to claims 1, 3, and 6-10 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2416

6. Claims 1, 3, 6-8, 10-13, and 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent 5,959,989 to Gleeson et al (hereinafter "Gleeson").

Regarding Claim 1, Gleeson discloses **a method for implementing multicast services, comprising:**

presetting a mapping relation between address information of multicast users and multicast authorities (Gleeson: See Figure 2B, table 240, wherein the MAC address correlates to a VLAN designation and Figure 3, table 312 wherein the VLAN designation corresponds to a multicast VLAN identifier.) **and a mapping relation between multicast authorities and multicast group addresses in a network equipment** (Gleeson: Col. 5, lines 55-59. A multicast network device assigns a multicast VLAN identifier for each unique combination of VLANs that are matched to multicast group addresses. Examiner correlates the MVLAN-ID to the multicast authority, as each MVLAN-ID encompasses entities subscribing to a message stream. See Col. 5, lines 59-61.), **at least one multicast user corresponding to different multicast authorities** (Gleeson: See Figure 3, tables 308 and 312. The one subscribing entity, 2 has multiple VLAN designations which then translate to multiple MVLAN-IDs.), **at least one multicast authority corresponding to many multicast users** (Gleeson: For example, see Figure 2A. The multicast VLAN ID, M_{oy} (multicast orange-yellow), is to port 1 of device 222, retransmitted through ports 4 and 3 having the correct MVLAN-ID designation, and sent to devices 221 and 223. At device 223, the users 35-37, having the correct orange-yellow designation, receive the

Art Unit: 2416

transmission.);

obtaining a request packet sent by a multicast user who requests to join in a multicast group (Gleeson: Col. 8, lines 60-67 and Col. 9, lines 1-2. The IGMP protocol is used to send join request messages.);

determining address information of the multicast user according to a Virtual Local Area Network identifier (VLAN ID) carried in the request packet and/or a frame number slot number and port number of the network equipment to which the multicast user is connected (Gleeson: Col. 9, lines 5-10. With regards to a VLAN, the multicast network device, MND, associates the subscribers VLAN designation with a group address, stored in a table of the MND, when the MND receives the request. With regards to associated port numbers, see Figures 2A and 2B.);

determining whether the multicast user corresponds to a multicast authority according to the mapping relation between address information of multicast users and multicast authorities (Gleeson: See Figure 2B, table 240, wherein the MAC address correlates to a VLAN designation and Figure 3, table 312 wherein the VLAN designation corresponds to a multicast VLAN identifier. See also Col. 11, lines 33-35.);

determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user among the mapping relation between multicast authorities and multicast group addresses (Gleeson: Col. 5, lines 55-59. A multicast network device assigns a multicast VLAN identifier for each

Art Unit: 2416

unique combination of VLANs that are matched to multicast group addresses.

Examiner correlates the MVLAN-ID to the multicast authority, as each MVLAN-ID encompasses entities subscribing to a message stream. See Col. 5, lines 59-61.

See also Col. 10, lines 48-53.);

if yes, permitting the multicast user to join in the multicast group,

otherwise, prohibiting the multicast user from joining in the multicast

group (Gleeson: Col. 13, lines 6-18. Any port with the proper VLAN designation receives the message. Any port without proper designations is prohibited from receiving the message.).

Regarding Claim 3, Gleeson discloses the method according to claim 1, if determining that the multicast user does not correspond to any multicast authority, further comprising:

determining whether the multicast user is a super user, if yes, permitting the multicast user to join in the multicast group, otherwise prohibiting the multicast user from joining in the multicast group (Gleeson: Col. 10, lines 14-21. each MND is capable instructing each entity in the network to utilize a particular group address.).

Regarding Claim 6, Gleeson discloses the method according to claim 1, wherein, the information of the multicast user is a frame number, a slot number and a port number of a layer-2 network equipment to which the multicast user is connected;

or a frame number, a slot number, a port number, a Virtual LAN identifier (VLAN ID), and an IP address of a layer-3 network equipment to which the

Art Unit: 2416

multicast user is connected (Gleeson: col. 12, lines 20-65. the packet contains an IP address, port number, and converted into a frame for transmission using TCP/IP on the network layer.).

Regarding Claim 7, Gleeson discloses the method according to claim 6, wherein, the layer-2 network equipment is a Digital Subscriber Line (DSL) broadband access equipment or a Local Area Network (LAN) switch (Gleeson: Figure 2A and col. 7, lines 50-59. The intermediate devices connecting hosts/users/entities of a LAN are switches.);

the layer-3 network equipment is a router or a layer-3 switch (Gleeson: Figure 2A and col. 7, lines 50-59. The multicast network device is preferably a router.).

Regarding Claim 8, Gleeson discloses the method according to claim 1, wherein, the step of obtaining the request packet sent by the multicast user who requests to join in the multicast group comprises: snooping the request packet by using an Internet Group Management Protocol (IGMP) technique (Gleeson: Col. 10, lines 22-24. The intermediate devices monitor the IGMP messages sent between the MND and entities.).

Regarding Claim 10, Gleeson discloses the method according to claim 1, wherein, the request packet is based on IGMP (Gleeson: Col. 8, lines 60-67 and Col. 9, lines 1-2. The IGMP protocol is used to send join request messages.).

Regarding Claim 11, Gleeson discloses **a method for implementing multicast services, comprising:**

presetting mapping relations among multicast users, multicast authorities and multicast programs in a network equipment (Gleeson: See Figure 2B, table 240, wherein the MAC address correlates to a VLAN designation and Figure 3, table 312 wherein the VLAN designation corresponds to a multicast VLAN identifier.), **wherein each multicast authority corresponds to at least one program that each refers to a multicast group address** (Gleeson: Col. 5, lines 59-62. The MVLAN-ID encompasses all VLAN designations subscribing to a message stream (program).), **at least one multicast user corresponds to different multicast authorities** (Gleeson: See Figure 3, tables 308 and 312. The one subscribing entity, 2 has multiple VLAN designations which then translate to multiple MVLAN-IDs.), **and at least one multicast authority corresponds to many multicast users** (Gleeson: For example, see Figure 2A. The multicast VLAN ID, M_{oy} (multicast orange-yellow), is to port 1 of device 222, retransmitted through ports 4 and 3 having the correct MVLAN-ID designation, and sent to devices 221 and 223. At device 223, the users 35-37, having the correct orange-yellow designation, receive the transmission.);

obtaining a request packet carrying a multicast group address from a multicast user who requests to join in a multicast group to utilize a multicast service by way of an Internet Group Management Protocol (IGMP) Snooping technique or IGMP Proxy technique (Gleeson: Col. 8, lines 60-67 and Col. 9, lines 1-2. The IGMP protocol is used to send join request messages.

Art Unit: 2416

Col. 10, lines 22-24. The intermediate devices monitor the IGMP messages sent between the MND and entities (this technique corresponds to snooping).);

determining address information of the multicast user according to the request packet, the address information of the multicast user depending on location information of a connection between the multicast user and the

network equipment (Gleeson: Col. 9, lines 5-10. With regards to a VLAN, the multicast network device, MND, associates the subscribers VLAN designation with a group address, stored in a table of the MND, when the MND receives the request. With regards to associated port numbers, see Figures 2A and 2B.);

determining whether the multicast user corresponds to a multicast authority according to the mapping relations (Gleeson: See Figure 2B, table 240, wherein the MAC address correlates to a VLAN designation and Figure 3, table 312 wherein the VLAN designation corresponds to a multicast VLAN identifier. See also Col. 11, lines 33-35.);

determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user according to the mapping relations (Gleeson:

Col. 5, lines 55-59. A multicast network device assigns a multicast VLAN identifier for each unique combination of VLANs that are matched to multicast group addresses. Examiner correlates the MVLAN-ID to the multicast authority, as each MVLAN-ID encompasses entities subscribing to a message stream. See Col. 5, lines 59-61. See also Col. 10, lines 48-53.);

if the multicast group address carried in the request packet matches a

Art Unit: 2416

multicast group address corresponding to the multicast authority of the multicast user, permitting the multicast user to use the requested multicast service;

if the multicast group address carried in the request packet does not match a multicast group address corresponding to the multicast authority, prohibiting the multicast user from using the requested multicast service

(Gleeson: Col. 13, lines 6-18. Any port with the proper VLAN designation receives the message. Any port without proper designations is prohibited from receiving the message.).

Regarding Claim 12, Gleeson discloses the method according to claim 11, wherein, the step of presetting mapping relations among multicast users, multicast authorities and multicast programs in a network equipment comprises: presetting a mapping relation between address information of multicast users and multicast authorities (Gleeson: See Figure 2B, table 240, wherein the MAC address correlates to a VLAN designation and Figure 3, table 312 wherein the VLAN designation corresponds to a multicast VLAN identifier.) and a mapping relation between multicast authorities and multicast group addresses (Gleeson: Col. 5, lines 55-59. A multicast network device assigns a multicast VLAN identifier for each unique combination of VLANs that are matched to multicast group addresses. Examiner correlates the MVLAN-ID to the multicast authority, as each MVLAN-ID encompasses entities subscribing to a message stream. See Col. 5, lines 59-61.);

Art Unit: 2416

the step of determining whether the multicast user corresponds to a multicast authority according to the mapping relations comprises:

determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user among the mapping relation between multicast authorities and multicast group addresses (Gleeson: See Figure 2B, table 240, wherein the MAC address correlates to a VLAN designation and Figure 3, table 312 wherein the VLAN designation corresponds to a multicast VLAN identifier. See also Col. 11, lines 33-35.);

and the step of determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user according to the mapping relations comprises: determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user among the mapping relation between multicast authorities and multicast group addresses (Gleeson: Col. 5, lines 55-59. A multicast network device assigns a multicast VLAN identifier for each unique combination of VLANs that are matched to multicast group addresses. Examiner correlates the MVLAN-ID to the multicast authority, as each MVLAN-ID encompasses entities subscribing to a message stream. See Col. 5, lines 59-61. See also Col. 10, lines 48-53.).

Regarding Claim 13, Gleeson discloses the method according to claim 12, wherein the step of determining address information of the multicast user comprises:

determining the location information of the multicast user according to a frame number, slot number and port number of the network equipment

(Gleeson: col. 12, lines 20-65. the packet contains an IP address, port number, and converted into a frame for transmission using TCP/IP on the network layer.).

Regarding Claim 15, Gleeson discloses the method according to claim 13, wherein the network equipment is a layer-3 network equipment to which the multicast user is connected, and the step of determining the location information of the multicast user according to a frame number, slot number and port number of the network equipment comprises:

determining the location information of the multicast user according to a frame number, a slot number, a port number, a Virtual LAN identifier (VLAN ID), and an IP address of a layer-3 network equipment to which the multicast user is connected (Gleeson: col. 12, lines 20-65. the packet contains an IP address, port number, and converted into a frame for transmission using TCP/IP on the network layer.).

Regarding Claim 16, Gleeson discloses the method according to claim 12, if determining that the multicast user does not correspond to any multicast authority, further comprising:

determining whether the multicast user is a super user, if yes, permitting the multicast user to join in the multicast group, otherwise prohibiting the

Art Unit: 2416

multicast user from joining in the multicast group (Gleeson: Col. 10, lines 14-21. each MND is capable instructing each entity in the network to utilize a particular group address.).

Regarding Claim 17, Gleeson discloses **a network equipment comprising an IGMP Snooping or IGMP proxy** (Gleeson: Col. 10, lines 22-24. The intermediate devices monitor the IGMP messages sent between the MND and entities.), **wherein the network equipment is preset mapping relations among multicast users, multicast authorities and multicast programs** (Gleeson: See Figure 2B, table 240, wherein the MAC address correlates to a VLAN designation and Figure 3, table 312 wherein the VLAN designation corresponds to a multicast VLAN identifier. Col. 5, lines 59-62. The MVLAN-ID encompasses all VLAN designations subscribing to a message stream (program).), **wherein, multicast users are identified according to location information of connections between the multicast users and the network equipment** (Gleeson: Col. 12, lines 21-32. Each entity formulates a packet message to send to group addresses containing at least a source IP address and group address.), **each multicast authority corresponds to at least one multicast program that each refers to a multicast group address** (Gleeson: Col. 5, lines 59-62. The MVLAN-ID encompasses all VLAN designations subscribing to a message stream (program).), **at least one multicast user corresponds to different multicast authorities** (Gleeson: See Figure 3, tables 308 and 312. The one subscribing entity, 2 has multiple VLAN designations

Art Unit: 2416

which then translate to multiple MVLAN-IDs.), **and at least one multicast authority corresponds to many multicast users** (Gleeson: For example, see Figure 2A. The multicast VLAN ID, M_{oy} (multicast orange-yellow), is to port 1 of device 222, retransmitted through ports 4 and 3 having the correct MVLAN-ID designation, and sent to devices 221 and 223. At device 223, the users 35-37, having the correct orange-yellow designation, receive the transmission.), **and the network equipment is operative to perform the steps:**

obtaining a request packet carrying a multicast group address from a multicast user who requests to join in a multicast group to utilize a multicast service by way of an Internet Group Management Protocol (IGMP) Snooping technique or IGMP Proxy technique (Gleeson: Col. 8, lines 60-67 and Col. 9, lines 1-2. The IGMP protocol is used to send join request messages. Col. 10, lines 22-24. The intermediate devices monitor the IGMP messages sent between the MND and entities (this technique corresponds to snooping).);

determining address information of the multicast user according to the request packet, the address information of the multicast user depending on location information of a connection between the multicast user and the network equipment (Gleeson: Col. 9, lines 5-10. With regards to a VLAN, the multicast network device, MND, associates the subscribers VLAN designation with a group address, stored in a table of the MND, when the MND receives the request. With regards to associated port numbers, see Figures 2A and 2B.);

determining whether the multicast user corresponds to a multicast authority according to the mapping relations (Gleeson: See Figure 2B, table

Art Unit: 2416

240, wherein the MAC address correlates to a VLAN designation and Figure 3, table 312 wherein the VLAN designation corresponds to a multicast VLAN identifier. See also Col. 11, lines 33-35.);

determining whether the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user according to the mapping relations (Gleeson: Col. 5, lines 55-59. A multicast network device assigns a multicast VLAN identifier for each unique combination of VLANs that are matched to multicast group addresses. Examiner correlates the MVLAN-ID to the multicast authority, as each MVLAN-ID encompasses entities subscribing to a message stream. See Col. 5, lines 59-61. See also Col. 10, lines 48-53.);

if the multicast group address carried in the request packet matches a multicast group address corresponding to the multicast authority of the multicast user, permitting the multicast user to use the requested multicast service;

if the multicast group address carried in the request packet does not match a multicast group address corresponding to the multicast authority of the multicast user, prohibiting the multicast user from using the requested multicast service (Gleeson: Col. 13, lines 6-18. Any port with the proper VLAN designation receives the message. Any port without proper designations is prohibited from receiving the message.).

Regarding Claim 18, Gleeson discloses the network equipment according to claim 17, wherein the mapping relations comprises a mapping

Art Unit: 2416

relation between address information of multicast users and multicast authorities (Gleeson: See Figure 2B, table 240, wherein the MAC address correlates to a VLAN designation and Figure 3, table 312 wherein the VLAN designation corresponds to a multicast VLAN identifier.) **and a mapping relation between multicast authorities and multicast group addresses** (Gleeson: Col. 5, lines 55-59. A multicast network device assigns a multicast VLAN identifier for each unique combination of VLANs that are matched to multicast group addresses. Examiner correlates the MVLAN-ID to the multicast authority, as each MVLAN-ID encompasses entities subscribing to a message stream. See Col. 5, lines 59-61.).

Regarding Claim 19, Gleeson discloses **the network equipment according to claim 18, wherein the address information of the multicast user comprises a Virtual Local Area Network identifiers (VLAN ID) and/or a frame number, slot number and port number of the network equipment to which the multicast user is connected** (Gleeson: col. 12, lines 20-65. the packet contains an IP address, port number, and converted into a frame for transmission using TCP/IP on the network layer.).

Regarding Claim 20, Gleeson discloses the network equipment according to claim 19, the network equipment is a Digital Subscriber Line (DSL) broadband access equipment or a Local Area Network (LAN) switch (Gleeson: Figure 2A and col. 7, lines 50-59. The intermediate devices connecting hosts/users/entities of a LAN are switches.); or a router or a layer-3 switch (Gleeson: Figure 2A and col. 7, lines 50-59. The multicast network device is preferably a router.).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2416

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gleeson in view of United States Patent Application Publication 2003/0147392 A1 to Hayashi et al (hereinafter "Hayashi").

Regarding Claim 9, Gleeson discloses **the method according to claim 1**, but is silent on an IGMP proxy.

Hayashi discloses a multicast system for authenticating users to a group multicast (Hayashi: [0007]). Hayashi further discloses **the step of obtaining the request packet sent by the multicast user who requests to join in the multicast group comprises:**

an IGMP Proxy terminating the request packet and requesting upper-layer network equipment for multicast recourses as a proxy of the multicast user (Hayashi: [0044]. The IGMP packet is processed by the routing device.

Authentication is carried out by an authentication server such as a RADIUS server (proxy).).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Gleeson to include a proxy as taught by Hayashi to ensure proper authentication before allowing a multicast user to enter/join a network or group (Hayashi: [0044]).

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gleeson in view of United States Patent 6,683,887 B1 to Huang et al (hereinafter "Huang").

Regarding Claim 14, Gleeson discloses the method according to claim 13, wherein the network equipment is a layer-2 network equipment to which the multicast user is connected (Gleeson: Figure 2A and col. 7, lines 50-59. The intermediate devices connecting hosts/users/entities of a LAN are switches.), but is silent on the elements of the layer-2 device.

Huang discloses **and the step of determining the location information of the multicast user according to a frame number, slot number and port number of the network equipment comprises:**
determining the address information of the multicast user according to a frame number, a slot number and a port number of a layer-2 network equipment to which the multicast user is connected (Huang: Col. 31, lines 14-55. An ADSL (asymmetrical digital subscriber line) bank control unit is used to transmit cell packets containing information including ports, frame sizes, and time slots, and further transmitted to multiple destinations in the multicast group.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang and Hayashi to include information regarding level-2 equipment as taught by Huang to increase data integrity of cell packets in an ADSL frame to support broadband traffic (Huang: Col. 4, lines 47-57).

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.

Art Unit: 2416

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN ELLIOTT whose telephone number is (571)270-7163. The examiner can normally be reached on Monday thru Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2416

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2416

BENJAMIN ELLIOTT
Examiner
Art Unit 2416